Meeting Summary

The following is a summary of issues discussed at BayStat on March 25, 2014. Analysis provided by StateStat.

WWTP Site Visit

- **StateStat Toured the Havre de Grace Waste Water Treatment Plant with Enhanced Nutrient Removal Technology.** In March, StateStat toured the Havre de Grace WWTP in order to gain a better understanding of the enhanced nutrient removal (ENR) upgrades being implemented across the state. Havre de Grace completed their ENR upgrade in 2010 reducing the amount of ammonia, nitrogen and phosphorus entering the bay. The plant upgrade has resulted in an estimated 53,000 fewer pounds of nitrogen and 18,000 fewer pounds of phosphorus entering the bay. The facility also expanded treatment capacity from 1.89 million gallons per day (MGD) to 3.3 MGD. There are multiple forms of ENR technology and MDE, the contractor and the WWTP operators all work together to identify the most effective and efficient option given the local WWTP resources. Havre de Grace reported they were very happy with the design and upgrade process. The plant operators indicated that not only did the ENR allow for removal of nutrients but the upgrades greatly improved the efficiency and overall operation of the plant. Notably, the upgrades allowed them to better handle surges of water that can result from extreme precipitation.

  The visit also presented potential opportunities for environmental literacy and veteran's employment efforts.

  Environmental Literacy: WWTP operators indicated they frequently give tours to school age children. The tours focus not only on the WWTP operations but the role the plant has in the health of the population and the bay. The operators reported they have a handout they made that they give to kids however they could benefit from more formal materials developed by environmental literacy professionals. Given the assumption that many if not all, WWTPs provide tours to school aged children, there is an opportunity for more formal support and engagement with these operators in order to maximize the environmental literacy impact these tours can have.

  Veteran's Employment: Both MDE and the WWTP operators indicated that finding individuals interested in filling positions at WWTP can prove difficult. WWTP operator positions may be a good fit for some veterans seeking employment. Many WWTPs are operated by counties and local municipalities so the State does not have a direct connection to these potential positions. MDE will be examining the options available. Maryland Environmental Services reported they are working with DLLR on a mentorship/apprenticeship program aimed at getting veterans into entry level positions with paid training and scheduled pay increases.

Aerial View of Havre de Grace Waste Water Treatment Plant

Phosphorus Management Tool

- **PMT Timeline Revised.** MDA submitted a revised timeline for PMT implementation. This month additional calendar year 2014 deliverables were delayed including the due date for the final report (from July to September), submission of the proposed regulations to AELR (from July to September) and the adoption of the new regulations (from October to December). Additionally, the economic analysis completion was extended into July and the initiation of using of both the old Phosphorus Site Index and the new PMT in Nutrient Management Plans has been delayed until January 2015.

- **Economic Impact Analysis Scope Finalized and Underway, Date of Final Report Pushed Back to September.** MDA agreed to fund the economic impact analysis. Since the last BayStat, MDA and BEACON (Salisbury University) have finalized the project scope. The draft report is now scheduled to be released in mid-July, followed by a peer-review process in August and the final report to be released in September. The September deadline assumes no major issues coming out of the peer review process and related adjustments to the report. The draft report and peer-review process are new to the timeline. The scope of the report is as follows:

    - Collect, gather, compile, categorize, and analyze all available economic and financial data and information related to the proposed PMT implementation, potential costs, potential benefits, intended and unintended consequences, and other related decision-points, from the perspective of all interested stakeholders.

- Develop a 25-person advisory panel to assist the BEACON Team with the data and information collection process described in the item above.
- Conduct three to five panel meetings plus extensive opinion leader and stakeholder interviews with as many knowledgeable individuals as possible to expand the data and information collection process described in the two items above.
- Develop a series of viable scenarios for the proposed PMT implementation process.
- For each of the scenarios, develop a series of economic assessment models and interactive dashboards including but not limited to:
  - Economic Impact Assessments (Macro and Micro Level)
  - Employment Impact Assessments (Macro Level)
  - Fiscal Impact Assessments (State and Local Levels)
  - Interactive Dashboards for each of the three sets of assessments described above
  - Sensitivity "What-If" analysis tabs for the dashboards described above
  - Farm level scenario analysis tool
- Develop a Scenario Model for exploring the findings from the various models and dashboards described above under a series of phased/blended implementation scenarios and subsidy/loss mitigation scenarios.

- **Early Adopter Program Requirements Will Depend on Analysis of Economic Impacts and Management Changes.** MDA has been holding internal scoping meetings and developing an "Early Adopter" concept to incentivize the implementation of the PMT prior to regulatory requirements. MDA has indicated the economic analysis and preliminary analysis of management changes will need to be completed in order to finalize requirements for the program. The program would be promoted during and after adoption of PMT regulations (September – December 2014).

- **PMT Outreach Plan Continues Implementation, Manure Website Launched. University of Maryland Extension Stakeholder Meetings Reach 1,350 Individuals. Stakeholder Response to the Meetings was Positive Though Dissatisfaction with the Implementation Approach and Distrust Voiced.** As part of the PMT discussions with stakeholders, MDA agreed to initiate a strategic outreach campaign in Fiscal Year 2014 targeted to the agricultural community (e.g., grain and poultry farmers, manure brokers) and the general public. The goals of the campaign are to:

  - Educate grain farmers about the benefits of poultry litter and livestock manure.
  - Reduce stigmas associated with the use of manure as an organic fertilizer.

- Educate the general public that there are technical and legal requirements for use and stockpiling of manure.

Moving forward the campaign will direct the agricultural community and general public back to a new MDA website landing page that went live in March. The webpage hosts a variety of resources on manure geared towards both audiences. MDA is also creating a "soundbook" to explain poultry litter stockpiles. This will be available on YouTube and linked to the new webpage around the end of March.

MDA has engaged the general public through a press release on March 1st covering the start of the fertilizing season and related environmental rules. They have also utilized social media to disseminate information and paid advertisements on Facebook as a follow up to the press release. MDA is also planning on reaching out to the agricultural community through multiple mediums. MDA plans to send multiple mailings to the 5,500 farmers on MDA's nutrient management list starting in June/July, with a follow up in November. As a complement to the direct mailings, MDA will run 4-6 week paid ad campaigns this summer and late fall in Delmarva Farmer and Lancaster Farming. MDA will also be submitting articles in targeted newsletters including, USDA, NRCS, Extension, SCD, and Farm Bureaus.

UME offered eleven educational programs throughout the Fall & Winter of 2013-14 (through March 1st) featuring the PMT. UME reached approximately 1,350 participants through these events offered across the state. MDA partnered with UME for one of these eleven events, and was present at the other ten. The meeting season for the most part has closed as farming season begins. Meetings will be resumed in the fall to continue the PMT outreach efforts.

Feedback Received from Stakeholders and reported by UME is as follows:

- Stakeholder response to educational programs was overwhelmingly positive.
- Stakeholders generally hold MDA and the O'Malley administration responsible for the PMT implementation debacle.
- Stakeholders would have preferred that implementation of PMT was postponed to allow for further testing and refinement.
- Stakeholders feel that the "top down" and non-collaborative approach to implementation of the PMT by MDA was ultimately responsible for the backlash from the agricultural community.
- Stakeholders understand that the science underpinning the PMT is sound and represents the best science currently available.
- Stakeholders understand that research on P transport and management is continuing and new knowledge will be implemented through future updates to the PMT.
- Stakeholders understand that new revisions to the current PMT will be forthcoming that will incorporate new science to improve the PMT's accuracy and precision.
- Stakeholders exhibit mistrust of the administration in their dealings with the agricultural community.
- Stakeholders perceive the administration is attempting to conceal the fact that research on P transport and management will continue in the future and will result in changes in the PMT.

UME offered the following lessons learned from the educational programs:

- Miscommunication problem on the use of the same term, PMT, but in different meanings to different groups - the researchers and policy maker, still exists in the agriculture community. While research results and updated expert assessment from the Mule Barn on individual portions of the PMT equation can change the tool multiple times within a year, the PMT as a regulation can only be

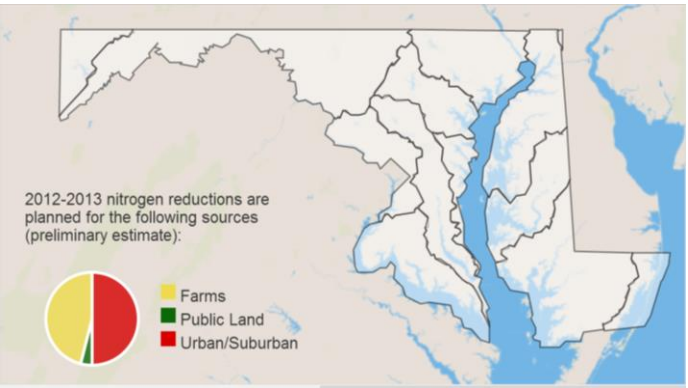
changed based on adoption of a peer-reviewed UME publication by the legislature isn't going to change for a couple of years. It is important that we differentiate the difference among the groups and to the stakeholders.

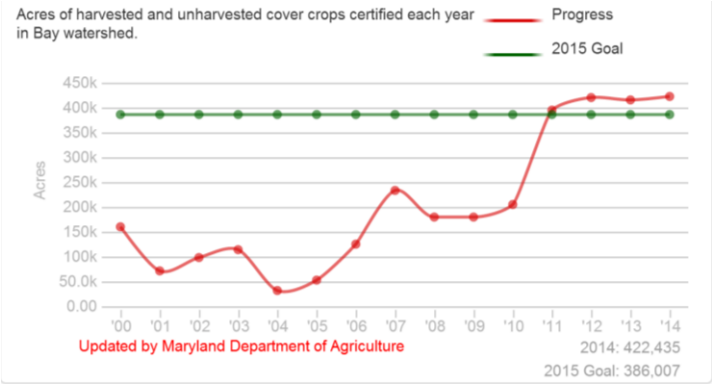
Available: http://mda.maryland.gov/Pages/Manure.aspx

BayStat Website

- **BayStat Agencies Updating Their Own Data, Work on Updating the Website Continues**. Over the last few months StateStat has been working with Baystat agencies to fully update the BayStat website, make site modifications and have worked closely with Salisbury in the changes to the way data are entered and site maintenance for the website. BayStat agencies are now responsible for updating their own data for the Baystat website and any qualitative content that accompanies the data. Agencies began monthly updates of their own statewide data last month.

  DNR and DoIT have been working with Salisbury in order for the State to have full management capabilities of the BayStat website. It was decided that Salisbury should be retained as the host of the maps. Salisbury can be contact for site changes requiring programing which should be in only rare instances while DoIT will be able to handle more minor website changes. BayStat Agencies have updated the goals line on all appropriate charts to reflect 2015 goals. Work continues on determining how to best illustrate goal progress from 10-11 and 12-13 on the solutions graphs.





Municipal Separate Storm Sewer System (MS4)

- **Department of Legislative Services Audit Shows MS4 Costs Exceed Revenue in Majority of MS4 Jurisdictions, fourth permit in the last four months determined to be issued.** The Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) stormwater regulations were published in 1990. Phase I of these regulations require large and medium size urban jurisdictions to control pollution in stormwater to the maximum extent practicable (MEP). Municipalities with less than 100,000 are handled separately under Phase II NPDES stormwater rules. Ten jurisdictions in Maryland fall under Phase I. MDE issues MS4 permits and these permits are to be updated every five years. While four of the five large jurisdictions had a permit older than five years at the end of FY2013, since December MDE has issued final determinations for MS4 permits to Baltimore County, Baltimore City, Prince George's County, and Anne Arundel County bringing all large jurisdictions up to date. Currently all five medium jurisdictions have permits eight years or older. MDE is to issue tentative determinations to medium sized jurisdictions including Carroll, Charles, Harford, Howard, and Frederick Counties in 2014. The issuance of these determinations in 2014 is based on agreement with the EPA to lift all objections. This is an "Ongoing" item from the 2012-2013 Programmatic Milestone.

  Each Phase II municipality is required to implement the following six minimum measures: public education and outreach; public participation and involvement; illicit discharge detection and elimination; construction site runoff control; post-construction runoff control; and pollution prevention/good housekeeping. Approximately 60 cities and towns in Maryland are Phase II jurisdictions. MDE has drafted phase II permits and permits are undergoing internal review and are scheduled to be submitted to EPA by July 2014 followed by issuance of a tentative determination for Phase II permits by the end of CY2014.

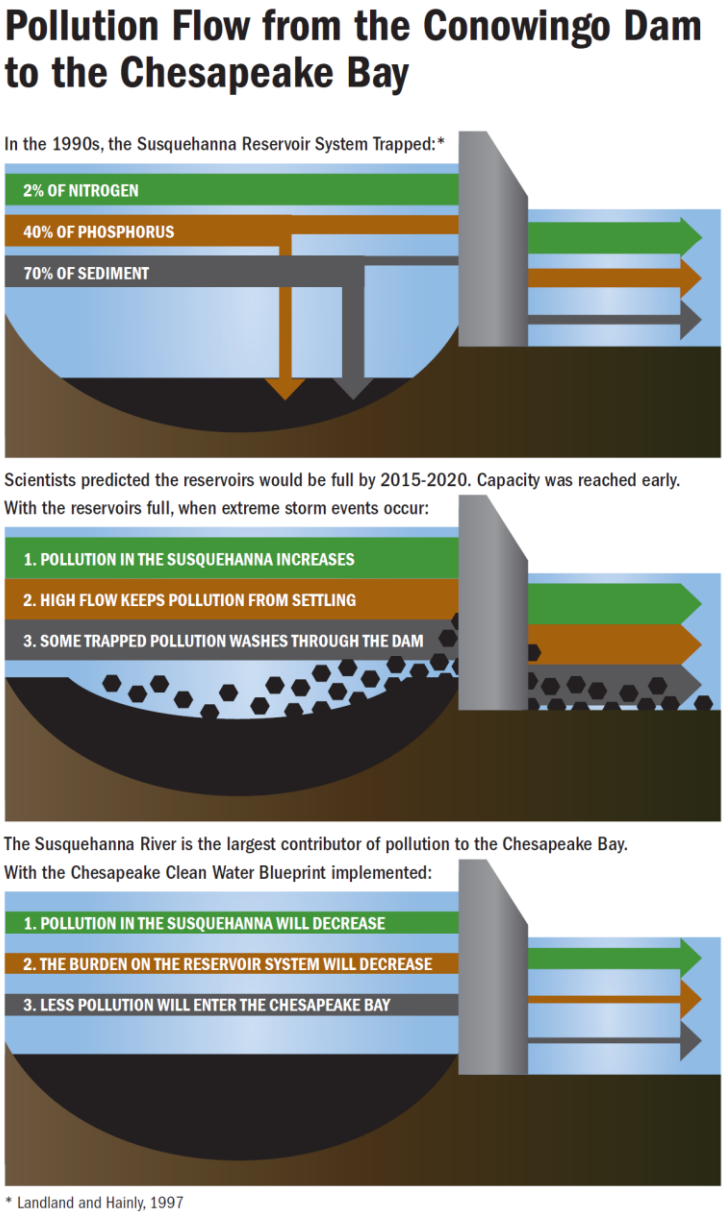
Chesapeake Bay Agreement

- **Decisions Made on Bay Agreement Governance and Watershed Agreement Comments**. Following the Chesapeake Bay Executive Council meeting in December, Secretary Gill and Deputy Secretary Dawson met with their counterparts in the other Bay States to discuss the ten governance decisions for the bay agreement and hear the thoughts and concerns with regards to the draft bay agreement. These meetings occurred in advance of the Principals' Staff Committee (PSC) meeting on February 28, 2014. The PSC arrived at a decision for all ten decision areas though Decision 3 and 8 require updates at the April Principals' Staff Committee Meeting.

  The public comment period for the Draft Chesapeake Bay Agreement closed on March 17, 2014 and over 2,400 comments were received. DNR sent a letter to the Chesapeake Bay Program Director summarizing

the critical issues identified and providing suggested specific language for inclusion in a revised agreement. Four critical issues were identified and include:

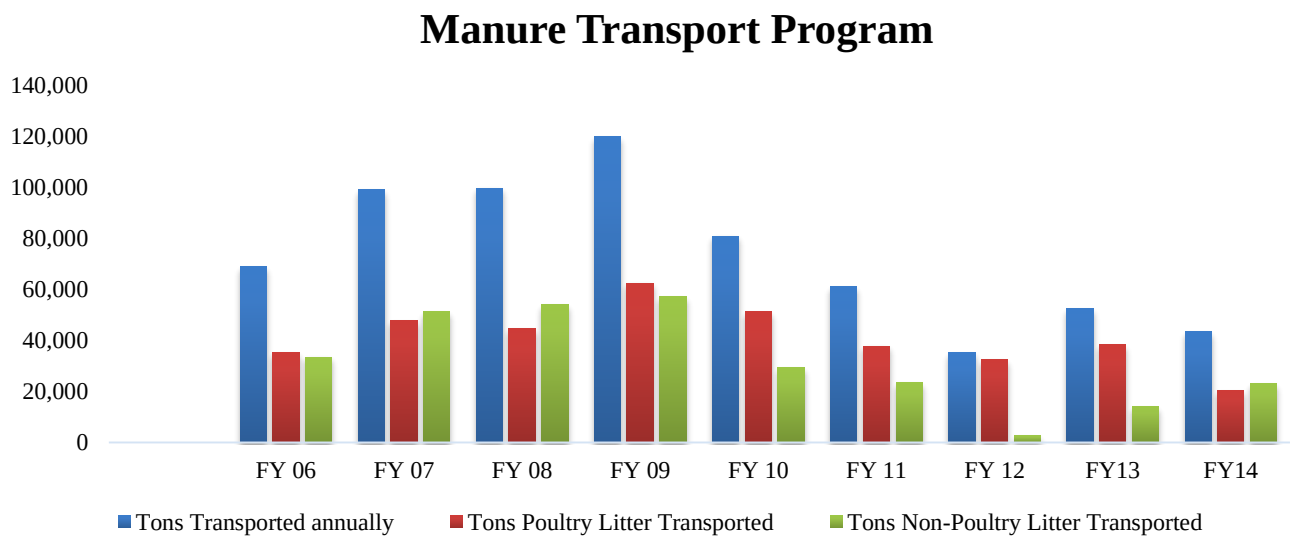
- Climate Change: Climate change should be thoroughly integrated into the agreement and a new, stand-alone goal and outcomes for "Climate Resiliency" should be added
- Toxics: A specific goal to reduce the impact of toxic contaminants on the watershed should be added
- Conowingo Dam: Addition of a critical assessment of the impact of the dam reaching dynamic equilibrium will have on Bay water quality standards should be added as an outcome under the water quality goal.
- Environmental Literacy: Clarification and strengthening the language in the Environmental Literacy goal is needed including outlining specific commitments related to schools, educators, local education agencies and the education community, and student opportunities.



Source: Chesapeake Bay Foundation. http://www.cbf.org/document.doc?id=1755

Manure

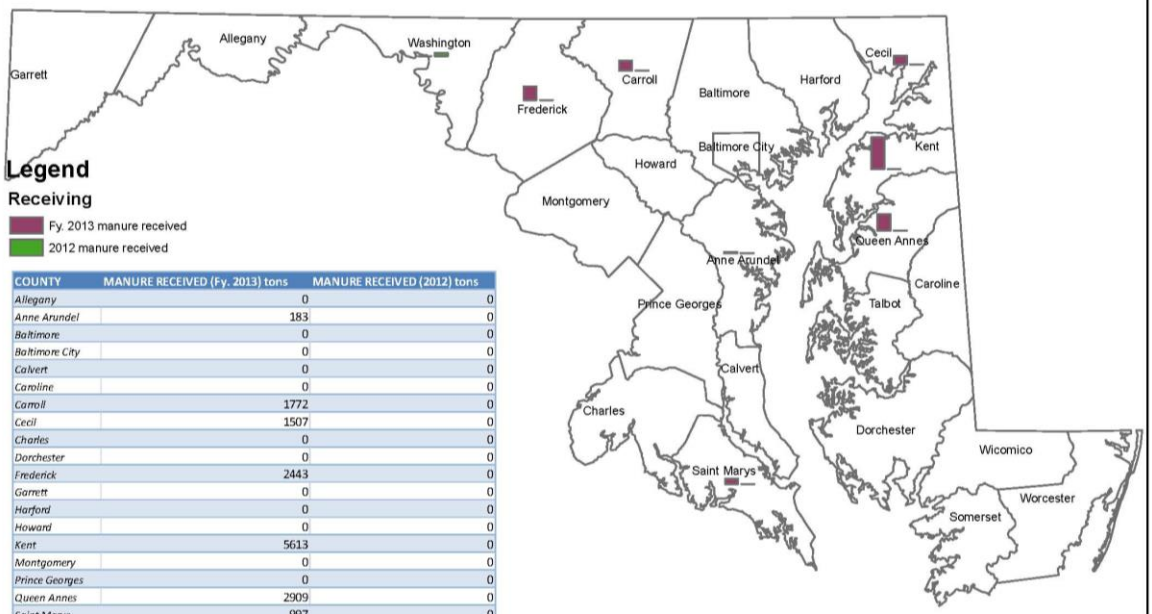
- **MDA Manure Follow up, Transportation Down Compared to 2006 through 2010, Manure Matching Service Revitalized and Promoted in FY2014.** The Manure Transport Program is a voluntary program that helps poultry, dairy, beef and other animal producers cover the costs of transporting excess manure off their farms and to farms that can handle the nutrient load. Over the last four years, the program has transported substantially less manure compared to FY2006 through FY2010. Funding for the program increased in FY2013 and FY2014 and with the introduction of the PMT, MDA expected the amount of manure transported to increase in the coming years. The program does have a cap of $18 a ton at 120 miles. This combined with the transportation barrier the bay presents, does limit where manure can be transported to. In September 2013, the program changed eligibility for operations transporting non-poultry manure from $7,500 per year to $30,000 per year. From September through December 2013, MDA met with poultry integrators to discuss raising the available dollar match. A verbal agreement for an increased match was made and the number of participating companies increased from three to five. In FY2014, the Manure Matching Service was revitalized and promoted. The Service connects farmers who have excess animal manure with nearby farmers or alternative use projects that can use the manure as a valuable resource.



*From Sept 2009-March 2012 program eligibility was restricted to transportation of manure out of watershed in accordance with BayStat policy recommendations.

Manure Transport Program (2012, FY. 2013)

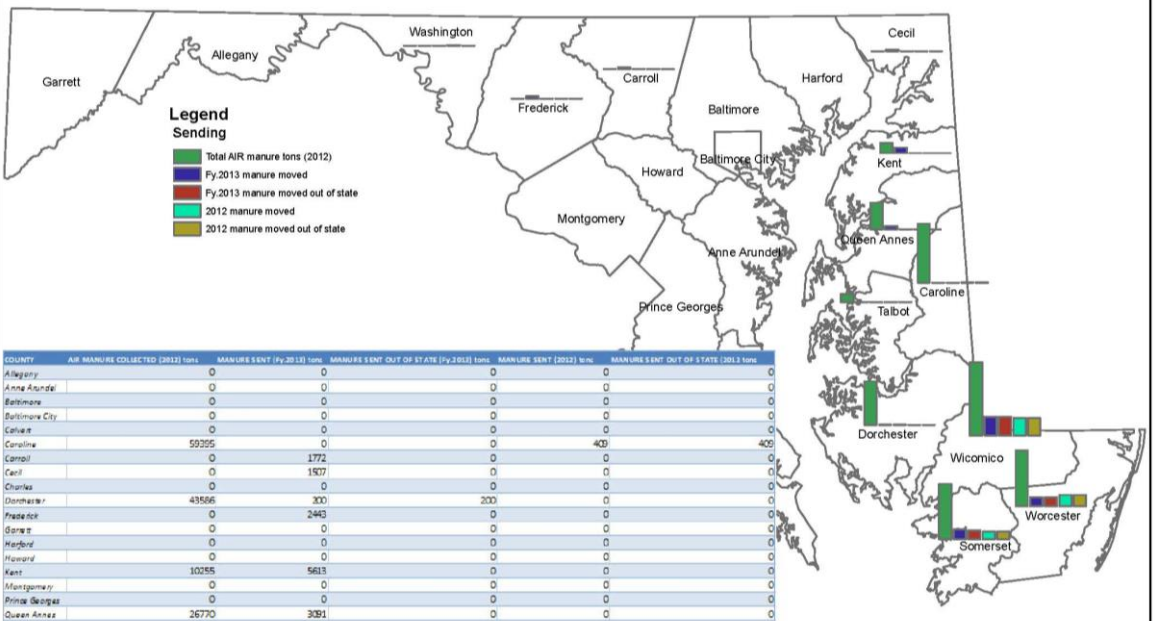
Receiving counties



COUNTY	MANURE RECEIVED (Fy. 2013) tons	MANURE RECEIVED (2012) tons
Allegany	0	0
Anne Arundel	183	0
Baltimore	0	0
Baltimore City	0	0
Calvert	0	0
Caroline	0	0
Carroll	1772	0
Cecil	1507	0
Charles	0	0
Dorchester	0	0
Frederick	2443	0
Garrett	0	0
Harford	0	0
Howard	0	0
Kent	5613	0
Montgomery	0	0
Prince Georges	0	0
Queen Annes	2909	0
Saint Marys	997	0
Somerset	0	0
Talbot	0	0
Washington	0	598
Wicomico	0	0
Worcester	0	0
Total	**15424**	**598**

Manure Transport Program (2012, FY. 2013)

Sending counties



COUNTY	AIR MANURE COLLECTED (2012) tons	MANURE SENT (Fy.2013) tons	MANURE SENT OUT OF STATE (Fy.2013) tons	MANURE SENT (2012) tons	MANURE SENT OUT OF STATE (2012 tons
Allegany	0	0	0	0	0
Anne Arundel	0	0	0	0	0
Baltimore	0	0	0	0	0
Baltimore City	0	0	0	0	0
Calvert	0	0	0	0	0
Caroline	59395	0	0	409	409
Carroll	0	1772	0	0	0
Cecil	0	1507	0	0	0
Charles	0	0	0	0	0
Dorchester	43586	200	200	0	0
Frederick	0	2443	0	0	0
Garrett	0	0	0	0	0
Harford	0	0	0	0	0
Howard	0	0	0	0	0
Kent	10255	5613	0	0	0
Montgomery	0	0	0	0	0
Prince Georges	0	0	0	0	0
Queen Annes	26770	3091	0	0	0
Saint Marys	0	0	0	0	0
Somerset	55531	9847	8850	7675	7675
Talbot	8406	0	0	0	0
Washington	0	0	0	598	0
Wicomico	73627	18833	18833	17773	17773
Worcester	56057	9176	9176	11454	11454
Total	***333757***	***52482***	***37059***	***37949***	***37351***

- **Animal Waste Technology Fund, Seven RFPs Being Reviewed, Awards in July**. The Animal Waste Technology Fund (AWTF) provides financial support to individuals, partnerships and companies to develop alternative uses of animal waste in order to provide farmers with new technologies and options to improve the management of animal wastes on farm and to reduce the potential for nutrient impacts to local waterways and the Chesapeake Bay. The AWTF is intended for pilot-type projects that demonstrate or commercialize existing technology or management strategies. The 2012 AWTF legislation established an Advisory Committee. The Secretary of Agriculture appointed members to the committee in June 2013. Responsibilities of the AWTF Advisory Committee include:

  1. Develop program criteria
  2. Review proposals submitted for funding
  3. Make project funding recommendations

  For FY2014, $2.5 million in capital appropriation funding from the Chesapeake Bay Trust Fund was approved. The advisory board held monthly meetings from June through November to establish program criteria. In October a Request for Interest was issued with 17 responses. In January 2014 an RFP was issued and by the close of the RFP (February 28, 2014) eight responses were received, seven of which met minimum eligibility requirements. Moving forward the review process will last through May 2014, recommendations to the Board of Public Works will be made in June, and grants will be awarded in July.

- **Manure to Energy Projects.** A potential solution to the excess manure and nutrients produced on Maryland's Eastern Shore, is manure to energy technology (MTE). Much of the discussion on MTE in Maryland for poultry manure has centered around Bio-digestion/Anaerobic Digestion. The emission profile for this MTE appears to be relatively low however the process produces a large quantity of nutrient-rich waste water and according to the Chesapeake Climate Action Network, the technical requirements may make it less economical for small operations. Additionally, MTE technology alone does not address the issue of the post-production product that still contains nitrogen and phosphorus. The State has moved to utilize MTE in the past to power a prison on the eastern shore and provide power to the University System of Maryland.

  The MIPS Manure to Energy Research and Development Grant is being implemented by Maryland Industrial Partnership in cooperation with DNR. This grant will fund innovative projects that utilize manure to energy technologies that reduce nitrogen and phosphorus being delivered to the Chesapeake Bay. Consideration will also be made for projects that process animal manure and capture and reduce nutrients in the manure producing a high-value marketable co-product. Funding allocated for these projects is $500,000 and applications are due in May.

Total Cycle of Poultry Manure Utilization